(12) UK Patent Application (19) GB (11) 2 016 247 A

(21) Application No 7906165
(22) Date of filing 21 Feb 1979
(23) Claims filed 21 Feb 1979
(30) Priority data
(31) 8675/78
(32) 4 Mar 1978
(33) United Kingdom (GB)
(43) Application published
19 Sep 1979
(51) INT CL²
H04L 3/00
H03K 13/00
(52) Domestic classification
H4P CC M4
(56) Documents cited
GB 1371614
GB 1251878
GB 1250908
(58) Field of search
H4M
H4P
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(54) Improved method of signalling supervisory information in digital line transmission systems

(57) In a line transmission system supervisory information is required in addition to digital information. Normally a separate transmission channel is required to transmit this information. The coding system of this proposal removes the requirement for an additional signalling channel. The method used requires that the line transmission coding employed should have more combinations than the coding of the data to be used (i.e. (2N-1) B→2NB). For example in optical fibre transmission systems it is usual to use line codes such as 3B 4B. In such a coding system there are 14 zero or 1 bit disparity codes which are available for mapping onto the eight "tri-bit" combinations of the data to be transmitted. Accordingly four illegal (i.e. unused) code combinations exist. Selective use of a pair of these illegal codes for the same pair of tri-bit combinations can be used to send a one bit supervisory signal.

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transmitter and a receiver, the line transmission system handling a digital information stream formed by a succession of binary information bytes and using a line coding code conversion process in which each information byte is encoded into a line transmission byte which contains more binary bits than the corresponding information byte and in which the transmitter includes means for controlling the code conversion process for selected information bytes to generate amended line transmission bytes which indicate the state of a supervisory signal in addition to the selected information byte and the receiver includes means for decoding the amended line transmission bytes and for indicating the state of the supervisory signal in addition to the selected information byte.

2. A method of handling supervisory information in a digital line transmission system according to claim 1 in which the line coding code conversion process uses a code of the form (2n-1)B/2nB (where n>1).

3. A method of handling supervisory information in a digital line transmission system according to claim 2 in which at least one of the information bytes is allocated two line transmission bytes arranged to be selected for transmission in accordance with the 1 or 0 state of the supervisory signal when the one information byte is to be transmitted.

4. A method of handling supervisory information in a digital line transmission system substantially as herein before described.

Printed for Her Majesty's Stationery Office by The Tweeddale Press Ltd., Berwick-upon-Tweed, 1979.
Published at the Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.